Personal Protective Equipment

Requirements and Guidelines for General Industry
29 CFR 1910.132

Occupational Safety & Health Bureau

Montana Department of Labor & Industry

Prepared for Montana Employers

by the

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Personal Protective Equipment (PPE) can be used by workers to prevent injury when engineering and administrative controls are not feasible or do not provide sufficient protection from the hazard. If PPE is required in the workplace certain steps must be taken to implement a PPE program.

This booklet will provide guidelines, program examples, and an overview of the Occupational Safety and Heath Administration (OSHA) standards. It is not intended to be totally inclusive of the OSHA standard and does not change the standard. Employers should obtain a copy of the PPE standard and use it to develop their own program for their worksite. Respirators and insulating devices are not included in this guide because OSHA requires employers to develop separate programs specifically addressing the issues associated with those types of protective devices (29 CFR 1910.134 and 26 CFR 1910.137, respectively). Hearing protection and hearing conservation is covered under 29 CFR 1910.95 and will not be discussed in this booklet. Although not specifically directed to construction, the information, methods, and procedures in this guide are also applicable to, and will help you comply with, OSHA general PPE requirements for the construction industry at 29 CFR 1926.95.

Although the checklists and guidelines presented in this guide are intended to help you to the greatest extent possible, please keep in mind that this booklet is general in nature and does not address all workplace hazards or PPE requirements. Free copies of the general industry and construction standards for PPE can be obtained from the OSHA website www.osha.gov.

I. General Requirements

(a) Application. Personal Protective Equipment must be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary to protect employees. PPE must be worn if engineering and administrative controls do not provide adequate protection from hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee-owned equipment. When employees provide their own protective equipment, the employer is responsible in assure its adequacy, including proper maintenance and sanitation.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed.

(d) Hazard assessment and equipment selection.

(1) The employer must assess the workplace to determine if hazards are present, or are likely to be present, which require the use of PPE. If such hazards are present, or likely to be present, the employer must:

(i) Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;
(ii) Communicate selection decisions to each affected employee; and

(iii) Select PPE that properly fits each affected employee.

(2) The employer must verify that the required workplace hazard assessment has been performed through a **written certification** that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment. (See Appendix A. for guidelines for a hazard assessment and Appendix B. for an example of a hazard assessment certification.)

(e) Defective and damaged equipment. Defective or damaged PPE shall not be used.

(f.) Training.

(1) The employer must provide training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

(i) When PPE is necessary;
(ii) What PPE is necessary;
(iii) How to properly don, doff, adjust, and wear PPE;
(iv) The limitations of the PPE; and
(v) The proper care, maintenance, useful life and disposal of PPE.

(2) Each affected employee must demonstrate an understanding of the training and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

(3) When the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill to use the PPE properly, the employer must retrain each such employee. Circumstances where retraining is required include, but are not limited to, situations where:

(i) Changes in the workplace render pervious training obsolete; or
(ii) Changes in the type of PPE to be used render previous training obsolete; or
(iii) Inadequacies in affected employee's knowledge or use of assigned PPE indicate that the employee has not retained the requisite understanding or skill.

(4) The employer must verify that each affected employee has received and understands the required training through a written certification that contains the name of each employee trained, the date(s) of training, and that identifies the subject of the certification.

II. Establishing a PPE Program

A PPE program sets out procedures for selecting, providing, and using PPE as part of your routine operation. A written program is easier to establish and maintain as company policy and easier to evaluate than an unwritten one. A PPE program should include the following topics:

Responsibilities, define the responsibilities for PPE use - supervisors, employees, and safety personal.
Hazard Assessment and Equipment selection.
Types of PPE used.
Training.
Cleaning and Maintenance.
Recordkeeping.
Medical Examination

A. Responsibilities

1. Supervisors have the primary responsibility for implementation of PPE program in their work area. This involves:

- Providing appropriate PPE.
- Ensuring employees are trained on proper use, care, and cleaning of PPE.
- Maintaining records on training and PPE assignments.
- Supervising staff to ensure that PPE program elements are followed and that employees properly use and care for PPE.
- Seeking assistance from safety personal to evaluate hazards.
- Notifying safety personal when new hazards are introduced or when processes are added or changed.
- Ensuring that defective or damaged equipment is immediately replaced.
- Enforcing the PPE program.

2. Employees using PPE are responsible for following the requirements of the PPE program. This involves:

- Wearing PPE as required.
- Attending and participating in required training sessions.
- Caring for, cleaning, and maintaining PPE as required.
- Informing the supervisor of the need to repair or replace PPE.

3. Health and Safety Personal or Managers have the responsibility to develop, implement, and administer the PPE program. This involves:

- Conducting workplace hazard assessments to determine the presence of hazards which necessitate the use of PPE.
- Assess potential hazards in every employee's workspace and in workplace operating procedures.
- Conducting periodic workplace reassessments as requested by supervisors.
- Maintaining record on hazard assessments.
- Providing guidance to supervisor for the selection and purchase of approved PPE.
- Training and providing technical assistance to supervisors and employees.
- Reviewing, updating, and evaluating the overall effectiveness of the PPE program

B. Hazard Assessment and Equipment Selection

OSHA requires employers to conduct inspections of all workplaces to determine the need for PPE and to help in selecting the proper PPE for each task performed (see Appendix A. Hazard Assessment Compliance guidelines). For each work site, a certificate must be completed which lists the findings of the inspection and the specific protective equipment needed (see Appendix B. Example Hazard Assessment Certification).

Once the hazards are identified determine if there are any feasible engineering, work practice, or administrative controls that could be used to eliminate or reduce hazards. Examples of engineering controls are substitution of toxic materials for less toxic ones, changing process design, and installing barriers. Administration controls are training, proper housekeeping, and change in work practices. If engineering and administrative controls do not eliminate the hazards PPE can then be used.

Types and models of PPE purchased must be considered carefully before committing money to them. The PPE selected must provide the most protection and should be as comfortable to the wearer as possible. PPE should be purchased in different sizes and models to give employees the choice of what they want to wear. If PPE is uncomfortable or awkward to wear an employee is more likely to take it off during work and be unprotected.

C. Types of PPE Used.

All personal protective clothing and equipment must be of safe design and construction for the work to be performed and must be maintained in a clean and reliable condition. Protective clothing and equipment used must meet NIOSH (National Institute for Occupational Safety and Health) or ANSI (American National Standards Institute). Newly purchased PPE must conform to the updated ANSI standards, which have been incorporated into the OSHA PPE regulations, as follows:

Eye and Face Protection ANSI Z87.1-1989
Head Protection ANSI Z89.1-1986
Foot Protection ANSI Z41.1-1991
Hand Protection, there are no ANSI standards for gloves, however, selection must be based on the performance characteristics of the glove in relation to the tasks to be performed.

Eye and Face Protection

Prevention of eye injuries requires that all persons who may be in eye hazard areas wear protective eyewear. This includes employees, visitors, researchers, contractors, or others passing through an identified eye hazard area. To provide protection for these personnel, supervisors of such areas shall purchase a sufficient quantity of goggles and/or plastic eye protectors, which afford the maximum amount of protection possible. If these personnel wear personal glasses, they shall be provided with a suitable eye protector to wear over them.

Suitable protectors must be used when employees are exposed to hazards from flying particles, molten metal, acids or caustic liquids, chemical liquids, gases, or vapors, bioaerosols, or potentially injurious light radiation.

Guidelines of protective eyewear.

Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment.
Side protectors shall be used when there is a hazard from flying objects.
Goggles and face shields shall be used when there is a hazard from chemical splash.
Face shields shall only be worn over primary eye protection (safety glasses or goggles).
Eye protection must not interfere with the function of other required PPE.
Eye protection must not restrict vision or movement.
Eye protection should be easy to clean and disinfect.
It must be reasonably comfortable to wear.

Equipment fitted with appropriate filter lenses shall be used to protect against light radiation. Tinted and shaded lenses are not considered filter lenses unless they are marked or identified as such. Eye and face PPE must be distinctly marked to facilitate identification of the manufacturer.

Prescription Safety Eyewear

OSHA regulations require that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design, or shall wear eye protection that can be worn over the prescription lenses (goggles, faceshields) without disturbing the proper position of the prescription lenses or the protective lenses.

Emergency Eyewash Facilities

Emergency eyewash facilities meeting the requirements of ANSI Z358.1 will be provided in all areas where the eyes of any employee may be exposed to corrosive materials. All such emergency facilities will be located where they are easily accessible in an emergency.

Head Protection

Head protection will be furnished to, and used by, all employees and contractors engaged in construction and other miscellaneous work. Head protection must also to be worn by engineers, inspectors, and visitors at construction sites when hazards from falling or fixed objects, or electrical shock are present. Bump caps/skull guards will be issued and worn for protection against scalp lacerations from contact with sharp objects. However, they will not be worn as substitutes for safety caps/hats because they do not provide protection from high impact forces or penetration by falling objects.

In general, protective helmets or hard hats should

Resist penetration by object,

Be water resistant and slow burning,

Absorb the shock of a blow, and

Come with instructions explaining proper adjustment and replacement of the suspension and headband.

Hard hats require a hard outer shell and a shock-absorbing lining. The lining should incorporate a headband and straps that suspend the shell from 1 to 1 ¼ inches away from the users head. This design provides shock absorption during impact and ventilation during use.

Protective helmets purchased after July 5, 1994, must comply with ANSI Z89.1-1986, those

purchased before this date must meet the ANSI Z89.1-1969 standard. Employers should train their employees in the proper use and maintenance of the hats including daily inspections. This will help to prolong the helmets effective use and save the employer money from purchasing new helmets frequently. If employees identify any of the following defects, remove the hard hats from service:

- The suspension system shows signs of deterioration such as:
    - Cracking, tearing, or fraying
- The suspension system no longer holds the shell from 1 to 1 ¼ inches away from the employee's head.
- The brim is cracked, perforated, or deformed.
- The brim or shell shows signs of exposure to heat, chemicals, ultraviolet light, or other radiation.

Foot and Leg Protection

Employers must provide foot and leg protection if the workplace hazard assessment reveals potential dangers to these parts of the body. The type of foot or leg protection needed will depend upon the specific hazard you identify and the specific part of the foot or legs exposed to potential injury. Safety footwear must meet the minimum compression and impact performance standards and testing requirements by ANSI. All safety footwear must comply with ANSI Z41-1991, "American National Standard for Personal Protection - Protective Footwear."

Safety shoes or boots with impact protection are required to be worn in work areas where carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection are required for work activities involving skid trucks (manual materials handling cars) or other activities in which materials or equipment could potentially roll over an employee's feet. Safety shoes or boots with puncture protection are required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees causing a foot injury.

Hand Protection

Suitable gloves shall be worn when hazards from chemicals, cuts, lacerations, abrasions, punctures, burns, biologicals, and harmful temperature extremes are present. Glove selection shall be based on performance characteristics of the gloves, conditions, duration of use, and hazards present. One type of glove will not work in all situations.

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical container labels and MSDSs before working with any chemical. Chemicals eventually permeate all glove materials. However, they can be used safely for limited time periods if

specific use and other characteristics (i.e., thickness and permeation rate and time) are known.

Body Protection

Employers must provide body protection for employees if they are threatened with bodily injury while performing their jobs, and if engineering and administrative controls have failed to eliminate these hazards. Workplace hazards that could cause bodily injury include the following:

Intense heat or cold;

Splashes of hot metals or liquids;

Impact from tools, machinery, and materials;

Cuts;

Hazardous chemicals;

Contact with potentially infectious materials; and

Radiation.

Employers need to provide PPE only for the parts of the body exposed to possible injury. Depending on the hazards in the workplace, the employer may provide employees with one or more of the following: vest, jackets, aprons, coveralls, surgical gown, and full body suits. The use of PPE especially full body suits can add to the heat stress and workload of the employees. Workers must be monitored closely for heat stress if required to wear full body suits.

D. Selection and Use of PPE in Laboratories

PPE may be required to reduce the risk of exposure of an employee by contact, inhalation or ingestion of an infectious agent, toxic substance, or radioactive material. For biological agents, the Biosafety Branch in conjunction with the Lab Supervisor will determine the Biosafety Level for the lab and the appropriate type of PPE required to be worn while working in the lab. Personnel utilizing radioactive materials are required to follow the requirements for protective equipment and clothing provided by the CDC Radiation Safety Manual and the Radiation Safety Officer.

Laboratory Coats and Gowns

The lab coat can be used to protect street clothing against biological or chemical spills as well as to provide some additional body protection. The specific hazard(s) and the degree of protection required must be known before selecting coats for lab personnel.

The CDC/NIH guidelines (BMBL) for biocontainment practices recommend the use of a lab coat, gown, smock, or uniform while working in biological laboratories. They further recommend solid-front or wrap-around gowns scrub suits, or coveralls.

Foot Protection

Safety shoes should be worn in any area where there is a significant risk of dropping heavy objects on the foot. Sandals and other types of open-toed shoes are not permitted in labs using biohazards or chemicals, due to the potential exposure to infectious agents or toxic materials as well as physical injuries associated with the work.

Boots, shoe covers, or other protective footwear, and disinfectant footbath may be required for work in labs.

Faceshields and Eye Protection

Faceshields and goggles should be worn whenever procedures with a high potential for creating aerosols are conducted. These include necropsy of infected animals, harvesting of tissues, or fluids from infected animals and manipulations of high concentrations or large volumes of infectious materials. All personnel entering animal rooms housing non-human primates should also wear appropriate eye and face protection.

Gloves

Gloves are worn in labs and animal rooms when handling infected animals and when skin contact with infectious materials, including blood and body fluids, is unavoidable.

E. **Cleaning and Maintenance**

It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision. PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. Personal protective equipment must not be shared between employees until it has been properly cleaned and sanitized.

It is also important to ensure that contaminated PPE, which cannot be decontaminated, is disposed of in a manner that protects employees from exposure to hazards.

E. **Recordkeeping**

Written records shall be kept of the names of persons trained, the type of training provided, and the dates when training occurred. The Employer must maintain the Hazard Assessment Certification Form and training records for at least 3 years.

Appendix A. Hazard Assessment Requirements

This Appendix is intended to provide compliance assistance for employers and employees in implementing requirements for a hazard assessment and the selection of personal protective equipment.

1. Controlling hazards. PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices.

2. Assessment and selection. It is necessary to consider certain general guidelines for assessing the foot, head, eye and face, and hand hazard situations that exist in an occupational or educational operation or process, and to match the protective devices to the particular hazard. It should be the responsibility of the safety officer to exercise common sense and appropriate expertise to accomplish these tasks.

3. Assessment guidelines. In order to assess the need for PPE the following steps should be taken:

a. *Survey*. Conduct a walk-through survey of the areas in question. The purpose of the survey is to identify sources of hazards to workers and co-workers. Consideration should be given to the basic hazard categories:

(a) Impact

(b) Penetration

(c) Compression (roll-over)

(d) Chemical

(e) Heat

(f) Harmful dust

(g) Light (optical) radiation

b. *Sources*. During the walk-through survey the safety officer should observe:

(a) sources of motion; i.e., machinery or processes where any movement of tools, machine elements or particles could exist, or movement of personnel that could result in collision with stationary objects;

(b) sources of high temperatures that could result in burns, eye injury or ignition of protective equipment, etc.;

(c) types of chemical exposures;

(d) sources of harmful dust;

(e) sources of light radiation, i.e., welding, brazing, cutting, furnaces, heat treating, high intensity lights, etc.;

(f) sources of falling objects or potential for dropping objects;

(g) sources of sharp objects which might pierce the feet or cut the hands;

(h) sources of rolling or pinching objects which could crush the feet;

(I) layout of workplace and location of co-workers; and (j) any electrical hazards. In addition, injury/accident data should be reviewed to help identify problem areas.

c. *Organize data*. Following the walk-through survey, it is necessary to organize the data and information for use in the assessment of hazards. The objective is to prepare for an analysis of the hazards in the environment to enable proper selection of protective equipment.

d. *Analyze data*. Having gathered and organized data on a workplace, an estimate of the potential for injuries should be made. Each of the basic hazards (paragraph 3.a.) should be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury from each of the hazards found in the area. The possibility of exposure to several hazards simultaneously should be considered.

4. Selection guidelines. After completion of the procedures in paragraph 3, the general procedure for selection of protective equipment is to:

(a) Become familiar with the potential hazards and the type of protective equipment that is available, and what it can do; i.e., splash protection, impact protection, etc.;

(b) compare the hazards associated with the environment; i.e., impact velocities, masses, projectile shape, radiation intensities, with the capabilities of the available protective equipment;

(c) select the protective equipment which ensures a level of protection greater than the minimum required to protect employees from the hazards; and

(d) fit the user with the protective device and give instructions on care and use of the PPE. It is very important that end users be made aware of all warning labels for and limitations of their PPE.

5. Fitting the device. Careful consideration must be given to comfort and fit. PPE that fits poorly will not afford the necessary protection. Continued wearing of the device is more likely if it fits the wearer comfortably. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.

6. Devices with adjustable features. Adjustments should be made on an individual basis for a comfortable fit that will maintain the protective device in the proper position. Particular care should be taken in fitting devices for eye protection against dust and chemical splash to ensure that the devices are sealed to the face. In addition, proper fitting of helmets is important to ensure that it will not fall off during work operations. In some cases a chinstrap may be necessary to keep the helmet on an employee's head. (Chin straps should break at a reasonably low force, however, so as to prevent a strangulation hazard). Where manufacturer's instructions are available, they should be followed carefully.

7. Reassessment of hazards. It is the responsibility of the safety officer to reassess the workplace hazard situation as necessary, by identifying and evaluating new equipment and processes, reviewing accident records, and reevaluating the suitability of previously selected PPE.

8. Selection chart guidelines for eye and face protection.

Eye and Face Protection Selection Chart

Source	Assessment of Hazard	Protection
IMPACT - Chipping, grinding machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding.	Flying fragments, objects, large chips, particles sand, dirt, etc. ..	Spectacles with side protection, goggles, face shields. See notes (1), (3), (5), (6), (10). For severe exposure, use faceshield.
HEAT-Furnace operations, pouring, casting, hot dipping, and welding.	Hot sparks	Faceshields, goggles, spectacles with side protection. For severe exposure use faceshield. See notes (1), (2), (3).
	Splash from molten metals.....	Faceshields worn over goggles. See notes (1), (2), (3).
	High temperature exposure.....	Screen face shields, reflective face shields. See notes (1), (2), (3).
CHEMICALS-Acid and chemicals handling, degreasing plating.	Splash	Goggles, eyecup and cover types. For severe exposure, use face shield. See notes (3),(11)
	Irritating mists ..	Special-purpose goggles.
DUST - Woodworking, buffing, general dusty conditions.	Nuisance dust	Goggles, eyecup and cover types. See note (8).
LIGHT and/or RADIATION - Welding: Electric arc	Optical radiation .	Welding helmets or welding shields. Typical shades: 10-14. See notes (9), (12).

Source	Assessment of Hazard	Protection
Welding: Gas	Optical radiation .	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4. See note (9).
Cutting, Torch brazing, Torch soldering	Optical radiation ..	Spectacles or welding face-shield. Typical shades, 1.5-3. See notes (3), (9).
Glare	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable. See notes (9), (10).

Notes to Eye and Face Protection Selection Chart:

(1) Care should be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of each of the hazards should be provided. Protective devices do not provide unlimited protection.

(2) Operations involving heat may also involve light radiation. As required by the standard, protection from both hazards must be provided.

(3) Faceshields should only be worn over primary eye protection (spectacles or goggles).

(4) As required by the standard, filter lenses must meet the requirements for shade designations in 1910.133(a)(5). Tinted and shaded lenses are not filter lenses unless they are marked or identified as such.

(5) As required by the standard, persons whose vision requires the use of prescription (Rx) lenses must wear either protective devices fitted with prescription (Rx) lenses or protective devices designed to be worn over regular prescription (Rx) eyewear.

(6) Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment. It should be recognized that dusty and/or chemical environments may represent an additional hazard to contact lens wearers.

(7) Caution should be exercised in the use of metal frame protective devices in electrical hazard areas.

(8) Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleansing may be necessary.

(9) Welding helmets or faceshields should be used only over primary eye protection (spectacles or goggles).

(10) Non-sideshield spectacles are available for frontal protection only, but are not acceptable eye protection for the sources and operations listed for "impact."

(11) Ventilation should be adequate, but well protected from splash entry. Eye and face protection should be designed and used so that it provides both adequate ventilation and protects the wearer from splash entry.

(12) Protection from light radiation is directly related to filter lens density. See note (4) . Select the darkest shade that allows task performance.

9. Selection guidelines for head protection. All head protection (helmets) is designed to provide protection from impact and penetration hazards caused by falling objects. Head protection is also available which provides protection from electric shock and burn. When selecting head protection, knowledge of potential electrical hazards is important. Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts). Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts). Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Where falling object hazards are present, helmets must be worn. Some examples include: working below other workers who are using tools and materials which could fall; working around or under conveyor belts which are carrying parts or materials; working below machinery or processes which might cause material or objects to fall; and working on exposed energized conductors

10. Selection guidelines for foot protection. Safety shoes and boots which meet the ANSI Z41-1991 Standard provide both impact and compression protection. Where necessary, safety shoes can be obtained which provide puncture protection. In some work situations, metatarsal protection should be provided, and in other special situations electrical conductive or insulating safety shoes would be appropriate.

Safety shoes or boots with impact protection would be required for carrying or handling materials such as packages, objects, parts or heavy tools, which could be dropped; and, for other activities where objects might fall onto the feet. Safety shoes or boots with compression protection would be required for work activities involving manual material handling carts, around bulk rolls (such as paper rolls), and around heavy pipes, all of which could potentially roll over an employee's feet. Safety shoes or boots with puncture protection would be required where sharp objects such as nails, wire, tacks, screws, large staples, scrap metal etc., could be stepped on by employees causing a foot injury.

11. Selection guidelines for hand protection. Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals that are capable of causing local or systemic effects following

dermal exposure. OSHA is unaware of any gloves that provide protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused.

It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. These performance characteristics should be assessed by using standard test procedures. Before purchasing gloves, the employer should request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. Other factors to be considered for glove selection in general include:

(A) As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse more expensive types; and,

(B) The work activities of the employee should be studied to determine the degree of dexterity required, the duration, frequency, and degree of exposure of the hazard, and the physical stresses that will be applied.

With respect to selection of gloves for protection against chemical hazards:

(A) The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects;

(B) Generally, any "chemical resistant" glove can be used for dry powders;

(C) For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials; and,

(D) Employees must be able to remove the gloves in such a manner as to prevent skin contamination.

12. Cleaning and maintenance. It is important that all PPE be kept clean and properly maintained. Cleaning is particularly important for eye and face protection where dirty or fogged lenses could impair vision.

For the purposes of compliance with 1910.132 (a) and (b), PPE should be inspected, cleaned, and maintained at regular intervals so that the PPE provides the requisite protection. It is also important to ensure that contaminated PPE which cannot be decontaminated is disposed of in a manner that protects employees from exposure to hazards.

Appendix B. Hazard Assessment Certification (Example)

This is an example of a PPE hazard assessment for chemical hazards eye hazards; a complete hazard assessment must include all hazards present or possible hazards; such as **Harmful Dust Exposure, Foot Hazards, Hand/Arm Exposure, Head Hazards, Noise Hazards, and Other Job-specific Hazards.**

PPE Hazard Assessment For: (Company Name)

Date: _____ Department: _____ Location: _____
Machine or Areas: _____ Person Conducting Assessment: _____

Type of Hazard Affected Work Areas

Chemical Hazards					
Absorption					
Contact with eye					
Contact with clothing					
Inhalation					
Ingestion					
Skin Irritant					
Other Hazards (list)					
Hazardous Chemicals Used at Site					
Chemical Name		*MSDS of File*	*PEL/TLV*	*Splash Hazard*	*PPE Required*
PPE Required					
Apron					
Coveralls/Lab Coat					
Dust/Mist Respirator					
Face Shield					
Goggles					
Encapsulating Suit					
Gloves – Chemical Resistant					
Respirator - SCBA					
Shoe Covers					
Other PPE (list)					

PPE Hazard Assessment – **Eye Hazard Exposure**

Type of Hazard Affected Work Area

Eye Hazards				
Brazing/Cutting/Welding				
Chipping				
Chiseling				
Electrical				
Grinding				
Lasers				
Masonry				
Power Fastening				
Riveting				
Sanding				
Sawing				
Ultraviolet Light				
Required PPE				
Face Shield				
Glasses – with/without (circle one) Side Shields				
Glasses – Shaded/Clear (circle one)				
Special Purpose Lenses				
Welding (circle one) Goggles/Helmet/Shield				
Other Eye Protection				